Index to volume 30 (1992)

No 1 (January) pp 1–64

No 2 (March) pp 65–144

No 3 (May) pp 145–200

No 4 (July) pp 201–272

No 5 (September) pp 273–344

No 6 (November) pp 345–416

January 1992

Ultrasonics: a window into biomedical science
P. N. T. Wells 3

Scattering of ultrasound from clusters of inclusions
I. D. Culverwell and J. A. Ogilvy ... 8

Scattering by non-metallic spheres
P. D. Thorne, L. Hayhurst and V. F. Humphrey 15

Experimental study of acoustical emission from bubble cloud excitation
I. N. Kozhevnikova and L. Bjørnø .. 21

Theoretical analysis of sound attenuation mechanisms in blood and in erythrocyte suspensions
P. V. Zinin

Failure to confirm increase in unscheduled DNA synthesis in sonicated mammalian cells *in vitro*
Y. Doida and M. W. Miller 35

Quantifying sonochemistry: casting some light on a 'black art'
T. J. Mason, J. P. Lorimer and D. M. Bates 40

Sensitivity of inversion algorithms for recovering elastic constants of anisotropic solids from longitudinal wavespeed data
A. G. Every and W. Sachse 43

Radiation of a rectangular strip-like focussing transducer. Part 1: harmonic excitation
R. Reibold and R. Kažys 49

Radiation of a rectangular strip-like focussing transducer. Part 2: transient excitation
R. Reibold and R. Kažys 56

On the propagation of horizontally polarized shear waves in a thin composite laminate plate
T.-T. Wu and S.-T. Chiu 60

March 1992

Multi-horn matching plate for ultrasonic transducers
N. H. Fletcher and S. Thwaites 67

Attenuation of ultrasound in solid wood
V. Bucur and F. Feeney 76

Waveguides in medical ultrasonics: effect of waveguide medium upon mode amplitude
N. C. Nicholson and W. N. McDicken 82

Interpretation of laser-generated low-order Lamb waves for elastic modulus measurements in thin films
S. E. Bobbin, J. W. Wagner and R. C. Cammarata 87

Acoustic waveguiding rods with graded velocity profiles
C. K. Jen, Z. Wang, A. Nicolle, J. F. Bussiere, E. L. Adler and K. Abe ... 91

Absorption and scatter of encapsulated gas filled microspheres: theoretical considerations and some measurements
N. de Jong, L. Hoff, T. Skotland and N. Bom 95

Propagation of ultrasonic waves in liquids: a new model
C. V. Suryanarayana 104

Differences in the acoustic echoes from submerged elastic shells containing different fluids
H. C. Strifors and G. C. Gaunaurd 107

Ultrasound Hyperthermia: Summary proceedings of a COMAC–BME Workshop 12–14 September 1991, Strasbourg, France 113

May 1992

Editorial 147

Ultrasound cavitation in sonochemistry: decomposition of carbon tetrachloride in aqueous solutions of potassium iodide
A. Alippi, F. Cataldo and A. Galbato 148

Fundamental aspects of sonochemistry
M. A. Margulis 152

Developments of the new 'experimental theory' of sonochemistry initiated in Grenoble
J. L. Luche 156

Sonochemical effects on syntheses involving solid and supported catalysts
J. Lindley 163

Effect of cavitation conditions on amorphous metal synthesis
M. W. Grinstaff, A. A. Cichowlas, S.-B. Choe and K. S. Suslick 168

Selected applications of sonochemistry in organic chemistry
R. Miethchen 173

Application of ultrasound to biotechnology: an overview
J. V. Sinisterra 180

Sonochemical enhancement of electrochemiluminescence
D. J. Walton, S. S. Phull, D. M. Bates, J. P. Lorimer and T. J. Mason 186

Industrial sonochemistry: potential and practicality
T. J. Mason 192

July 1992

Sonochemistry: from research laboratories to industrial plants
J. Berlan and T. J. Mason 203

Propagation characteristics of elastic circumferential waves in nuclear fuel cladding tubes
M. S. Choi, H. C. Kim and M. S. Yang 213

Detection of leak-defective fuel rods using the circumferential Lamb waves excited by the resonance backscattering of ultrasonic pulses
M. S. Choi, M. S. Yang and H. C. Kim 221

Doppler ultrasound technique for measuring capillary-speed flow velocities with strong stationary echoes
T-H. Ting, V. L. Newhouse and Y. Li 225

Speckle reduction in ultrasonic synthetic aperture images
Y. Li, V. L. Newhouse, P. M. Shankar and P. Karpur 233

Upper sound pressure limits on particle concentration in fields of ultrasonic standing-wave at megahertz frequencies
R. K. Gould, W. T. Coakley and M. A. Grundy 239

Immersion tomography using Rayleigh and Lamb waves
D. P. Jansen and D. A. Hutchins . 245

Rayleigh wave scattering from surface features: up-steps and troughs
R. J. Blake and L. J. Bond 255

Role of frequency in the ultrasonic activation of chemical reactions
G. Cum, G. Galli, R. Gallo and A. Spadaro 267

September 1992

Time-of-flight diffraction tomography for NDT applications
L. Capineri, H. G. Tattersall, J. A. G. Temple and M. G. Silk 275

Effects of random fluctuations in ply mechanical properties on ultrasound propagation in a laminated solid layer
Yichi Lu 289

Phase of Lamb wave radiation from a plate immersed in a liquid
J.-F. Piet, G. Quentin, M. de Billy, Q.-G. Zhu and W. G. Mayer 297

Experimental examination of mode conversion at hemispherical surface indentations
H. Zhu, L. J. Bond and P. H. Albach 301

A simulation of pulse–echo amplitude scan signal formation in absorbing media
M. G. S. Ali and A. Raouf Mohamed 311

A self-learning neural net for ultrasonic signal analysis
T. Raju Damarla, P. Karpur and P. K. Bhagat 317

Evidence that ultrasonically-induced microbubbles carry a negative electrical charge
D. J. Watmough, M. B. Shiran, K. M. Quan, A. P. Sarvazyan, E. P. Khiznyak and T. N. Pashovkin 325

The effect of power ultrasound on the oxidative dissolution of $RuO_2.xH_2O$ by bromate ions
D. Worsley and A. Mills 333

November 1992

Automated measurement of ultrasound velocity and attenuation
M. Salgueiro da Silva, R. S. Eccleston, J. Bessa Sousa and S. B. Palmer . 347

Split spectrum processing: a new filtering approach for improved signal-to-noise ratio enhancement of ultrasonic signals
P. Karpur and O. J. Canelones ... 351

Index to volume 30 (1992)

No 1 (January) pp 1–64

No 2 (March) pp 65–144

No 3 (May) pp 145–200

No 4 (July) pp 201–272

No 5 (September) pp 273–344

No 6 (November) pp 345–416

January 1992

Ultrasonics: a window into biomedical science
P. N. T. Wells 3

Scattering of ultrasound from clusters of inclusions
I. D. Culverwell and J. A. Ogilvy ... 8

Scattering by non-metallic spheres
P. D. Thorne, L. Hayhurst and V. F. Humphrey 15

Experimental study of acoustical emission from bubble cloud excitation
I. N. Kozhevnikova and L. Bjørnø .. 21

Theoretical analysis of sound attenuation mechanisms in blood and in erythrocyte suspensions
P. V. Zinin

Failure to confirm increase in unscheduled DNA synthesis in sonicated mammalian cells *in vitro*
Y. Doida and M. W. Miller 35

Quantifying sonochemistry: casting some light on a 'black art'
T. J. Mason, J. P. Lorimer and D. M. Bates 40

Sensitivity of inversion algorithms for recovering elastic constants of anisotropic solids from longitudinal wavespeed data
A. G. Every and W. Sachse 43

Radiation of a rectangular strip-like focussing transducer. Part 1: harmonic excitation
R. Reibold and R. Kažys 49

Radiation of a rectangular strip-like focussing transducer. Part 2: transient excitation
R. Reibold and R. Kažys 56

On the propagation of horizontally polarized shear waves in a thin composite laminate plate
T.-T. Wu and S.-T. Chiu 60

March 1992

Multi-horn matching plate for ultrasonic transducers
N. H. Fletcher and S. Thwaites 67

Attenuation of ultrasound in solid wood
V. Bucur and F. Feeney 76

Waveguides in medical ultrasonics: effect of waveguide medium upon mode amplitude
N. C. Nicholson and W. N. McDicken 82

Interpretation of laser-generated low-order Lamb waves for elastic modulus measurements in thin films
S. E. Bobbin, J. W. Wagner and R. C. Cammarata 87

Acoustic waveguiding rods with graded velocity profiles
C. K. Jen, Z. Wang, A. Nicolle, J. F. Bussiere, E. L. Adler and K. Abe ... 91

Absorption and scatter of encapsulated gas filled microspheres: theoretical considerations and some measurements
N. de Jong, L. Hoff, T. Skotland and N. Bom 95

Propagation of ultrasonic waves in liquids: a new model
C. V. Suryanarayana 104

Differences in the acoustic echoes from submerged elastic shells containing different fluids
H. C. Strifors and G. C. Gaunaurd 107

Ultrasound Hyperthermia: Summary proceedings of a COMAC–BME Workshop 12–14 September 1991, Strasbourg, France 113

May 1992

Editorial 147

Ultrasound cavitation in sonochemistry: decomposition of carbon tetrachloride in aqueous solutions of potassium iodide
A. Alippi, F. Cataldo and A. Galbato 148

Fundamental aspects of sonochemistry
M. A. Margulis 152

Developments of the new 'experimental theory' of sonochemistry initiated in Grenoble
J. L. Luche 156

Sonochemical effects on syntheses involving solid and supported catalysts
J. Lindley 163

Effect of cavitation conditions on amorphous metal synthesis
M. W. Grinstaff, A. A. Cichowlas, S.-B. Choe and K. S. Suslick 168

Selected applications of sonochemistry in organic chemistry
R. Miethchen 173

Application of ultrasound to biotechnology: an overview
J. V. Sinisterra 180

Sonochemical enhancement of electrochemiluminescence
D. J. Walton, S. S. Phull, D. M. Bates, J. P. Lorimer and T. J. Mason 186

Industrial sonochemistry: potential and practicality
T. J. Mason 192

July 1992

Sonochemistry: from research laboratories to industrial plants
J. Berlan and T. J. Mason 203

Propagation characteristics of elastic circumferential waves in nuclear fuel cladding tubes
M. S. Choi, H. C. Kim and M. S. Yang 213

Detection of leak-defective fuel rods using the circumferential Lamb waves excited by the resonance backscattering of ultrasonic pulses
M. S. Choi, M. S. Yang and H. C. Kim 221

Doppler ultrasound technique for measuring capillary-speed flow velocities with strong stationary echoes
T-H. Ting, V. L. Newhouse and Y. Li 225

Speckle reduction in ultrasonic synthetic aperture images
Y. Li, V. L. Newhouse, P. M. Shankar and P. Karpur 233

Upper sound pressure limits on particle concentration in fields of ultrasonic standing-wave at megahertz frequencies
R. K. Gould, W. T. Coakley and M. A. Grundy 239

Immersion tomography using Rayleigh and Lamb waves
D. P. Jansen and D. A. Hutchins . 245

Rayleigh wave scattering from surface features: up-steps and troughs
R. J. Blake and L. J. Bond 255

Role of frequency in the ultrasonic activation of chemical reactions
G. Cum, G. Galli, R. Gallo and A. Spadaro 267

September 1992

Time-of-flight diffraction tomography for NDT applications
L. Capineri, H. G. Tattersall, J. A. G. Temple and M. G. Silk 275

Effects of random fluctuations in ply mechanical properties on ultrasound propagation in a laminated solid layer
Yichi Lu 289

Phase of Lamb wave radiation from a plate immersed in a liquid
J.-F. Piet, G. Quentin, M. de Billy, Q.-G. Zhu and W. G. Mayer 297

Experimental examination of mode conversion at hemispherical surface indentations
H. Zhu, L. J. Bond and P. H. Albach 301

A simulation of pulse–echo amplitude scan signal formation in absorbing media
M. G. S. Ali and A. Raouf Mohamed 311

A self-learning neural net for ultrasonic signal analysis
T. Raju Damarla, P. Karpur and P. K. Bhagat 317

Evidence that ultrasonically-induced microbubbles carry a negative electrical charge
D. J. Watmough, M. B. Shiran, K. M. Quan, A. P. Sarvazyan, E. P. Khiznyak and T. N. Pashovkin 325

The effect of power ultrasound on the oxidative dissolution of $RuO_2.xH_2O$ by bromate ions
D. Worsley and A. Mills 333

November 1992

Automated measurement of ultrasound velocity and attenuation
M. Salgueiro da Silva, R. S. Eccleston, J. Bessa Sousa and S. B. Palmer . 347

Split spectrum processing: a new filtering approach for improved signal-to-noise ratio enhancement of ultrasonic signals
P. Karpur and O. J. Canelones ... 351

Crack-like defect detection and sizing from image segmentation through co-occurrence matrix analysis
J. Moysan, G. Corneloup, I. E. Magnin and P. Benoist 359
Stiffness matrix invariants to validate the characterization of composite materials with ultrasonic methods
B. Hosten 365
Phase and group velocity considerations for dynamic modulus measurement in anisotropic media
S. K. Sahay, R. A. Kline and R. Mignogna 373
Ultrasonic analysis of edible fats and oils
D. J. McClements and M. J. W. Povey 383
The effect of bone structure on ultrasonic attenuation and velocity
M. B. Tavakoli and J. A. Evans ... 389
Sonochemistry: a systematic study of the maleate-fumarate isomerization in the presence of alkyl bromides
J. Reisse, D.-H. Yang, M. Maeck, J. Vandercammen and E. Vander Donckt 397
Frequency scanning ultrasonic pulse echo reflectometer
D. J. McClements and P. Fairley . 403
A software controllable time-gain-compensation amplifier board for VMEbus systems
J. T. M. Verhoeven and J. M. Thijssen 407

Authors

Abe, K. 91
Adler, E. L. 91
Albach, P. H. 301
Ali, M. G. S. 311
Alippi, A. 148
Bates, D. M. 40, 186
Benoist, P. 359
Berlan, J. 203
Bessa Sousa, J. 347
Bhagat, P. K. 317
Bjorno, L. 21
Blake, R. J. 255
Bobbin, S. E. 87
Bom, N. 95
Bond, L. J. 255, 301
Bucur, V. 76
Bussiere, J. F. 91
Cammarata, R. C. 87
Canelones, O. J. 351
Capineri, L. 275
Cataldo, F. 148
Chiu, S.-T. 60
Choe, S.-B. 168
Choi, M. S. 213, 221
Cichowlas, A. A. 168
Coakley, W. T. 239
Corneloup, G. 359
Culverwell, I. D. 8
Cum, G. 267
Damarla, T. R. 317
de Billy, M. 297
de Jong, N. 95
Doida, Y. 35
Donckt, E. V. 399
Eccleston, R. S. 347
Evans, J. A. 391
Every, A. G. 43
Fairley, P. 403
Feeney, F. 76
Fletcher, N. H. 67
Frederiksen, F. 113
Frey, P. 113
Galbato, A. 148
Galli, G. 267
Gallo, R. 267
Gaunaurd, G. C. 107
Gautherie, M. 113
Gould, R. K. 239
Grinstaff, M. W. 168
Grundy, M. A. 239
Hand, J. W. 113
Hayhurst, L. 15
Hill, C. R. 113
Hoff, L. 95
Hosten, B. 365
Humphrey, V. F. 15
Hutchins, D. A. 245
Hynynen, K. 113
Jansen, D. P. 245
Jen, C. K. 91
Karpur, P. 233, 317, 351
Kazys, R. 49, 56
Khizhnyak, E. P. 325
Kim, H. C. 213, 221
Kline, R. A. 373
Kozhevnikova, I. N. 21
Lagendijk, J. 113
Li, Y. 225, 233
Lindley, J. 163
Lorimer, J. P. 40, 186
Lu, Y. 289
Luche, J. L. 156
Maeck, M. 399
Magnin, I. E. 359
Marchal, C. 113
Margulis, M. A. 152
Mason, T. J. 40, 186, 192, 203
McClements, D. J. 385, 403
McDicken, W. N. 82
Miethchen, R. 173
Mignogna, R. 373
Miller, M. W. 35
Mills, A. 333
Mohamed, A. R. 311
Moysan, J. 359
Newhouse, V. L. 225, 233
Nicholson, N. C. 82
Nicolle, A. 91
Ogilvy, J. A. 8
Palmer, S. B. 347
Pashovkin, T. N. 325
Phull, S. S. 186
Piet, J.-F. 297
Povey, M. J. W. 385
Quan, K. M. 325
Quentin, G. 297
Reibold, R. 49, 56
Reisse, J. 399
Sachse, W. 43
Sahay, S. K. 373
Salgueiro da Silva, M. 347
Sarvazyan, A. P. 325
Shankar, P. M. 233
Shiran, M. B. 325
Silk, M. G. 275
Sinisterra, J. V. 180
Skotland, T. 95
Spadaro, A. 267
Strifors, H. C. 107
Suryanarayana, C. V. 104
Suslick, K. S. 168
Tattersall, H. G. 275
Tavakoli, M. B. 391
Temple, J. A. G. 275
Thijssen, J. M. 407
Thorne, P. D. 15
Thwaites, S. 67
Ting, T-H. 225
Vandercammen, J. 399
Verhoeven, J. T. M. 407
Wagner, J. W. 87
Walton, D. J. 186
Wang, Z. 91
Watmough, D. J. 113, 325
Wells, P. N. T. 3
Worsley, D. 333
Wu, T.-T. 60
Yang, D-H. 399
Yang, M. S. 213, 221
Zhu, H. 301
Zhu, Q.-G. 297
Zinin, P. V. 26

Keywords

Absorption
attenuation, erythrocyte suspensions 26
ultrasonic A-scan, transducers 311
Acoustics
acoustic lenses, buffer rod 91
Acoustic echoes
submerged elastic shells, scattering of waves 107
Acoustic emission
bubble clouds, frequency transformation 21
Acoustic lenses
buffer rod, acoustics 91
Acoustic streaming
ultrasonic cavitation, ultrasonic standing waves 239
Albunex
Ultrasound, contrast agent 95
Amorphous metal synthesis
sonochemistry, cavitation 168
Anisotropic media
phase velocity, group velocity 373
Anisotropy
propagation, composites 60
Artificial neural nets
signal analysis, learning algorithms 317
Attenuation
absorption, erythrocyte suspensions 26
automated measurement, velocity . 347
ultrasonic velocity, impedance 403
Automated measurement
attenuation, velocity 347
BSCAN imaging
non-destructive testing, image processing 359
Bioeffects
biomedicine, tissue properties, biological tissues, unscheduled DNA synthesis 35
Biological tissues
bioeffects, unscheduled DNA synthesis 35
Biomedicine
bioeffects, tissue properties 35
Biotechnology
sonochemistry, enzymes 180
Born approximation
ultrasonic imaging, geometrical theory of diffraction 275
Bubble clouds
acoustic emission, frequency transformation 21
Bubble dynamics
cavitation, sonoluminescence 152
Bubble radii distribution
sonochemistry, frequency effects . 267
Bubbles
cavitation, diffraction patterns 325
Buffer rod
acoustic lenses, acoustics 91

Capillary blood flow
ultrasound Doppler 225
Carbon tetrachloride
sonochemistry, cavitation 148
Catalysts
sonochemistry, synthetic reactions 163
Cavitation
sonochemistry, carbon tetrachloride 148
bubble dynamics, sonoluminescence 152
sonochemistry, amorphous metal synthesis 168
diffraction patterns, bubbles 325
Chemical engineering
power ultrasound, industrial sonochemistry 192
Circumferential waves
resonance, Lamb waves 213
Composite materials
elastic constants, ultrasonic measurements 365
Composites
propagation, anisotropy 60
Compression waves
Rayleigh waves, mode conversion 301
Contrast agent
ultrasound, Albunex 95
Detection of defective fuel rod
Lamb wave, resonance scattering . 221
Diffraction patterns
cavitation, bubbles 325
Dissolution kinetics
oxidative dissolution, $RuO_2.xH_2O$ 333
Elastic constants
inversion algorithm, longitudinal wavespeeds 43
composite materials, ultrasonic measurements 365
Electrochemiluminescence
sonochemistry, sonochemical enhancement 186
Enzymes
sonochemistry, biotechnology 180
Erythrocyte suspensions
attenuation, absorption 26
Fats
ultrasound, oils 385
Filtering
split spectrum processing, SNR enhancement 351
Frequency effects
sonochemistry, bubble radii distribution 267
Frequency transformation
acoustic emission, bubble clouds .. 21
Geometrical theory of diffraction
ultrasonic imaging, Born approximation 275
Group velocity
phase velocity, anisotropic media . 373
Harmonic excitation
transducers, SAFT 49
Image processing
non-destructive testing, BSCAN imaging 359
Impedance
transducers, matching 67
ultrasonic velocity, attenuation ... 403
Inclusions
ultrasound attenuation, scattering ... 8
Industrial applications
sonochemistry, research 203
Industrial sonochemistry
power ultrasound, chemical engineering 192
Inversion algorithms
elastic constants, longitudinal wavespeeds 43
Lamb waves
circumferential waves, resonance . 213
detection of defective fuel rod, resonance scattering 221
laser-ultrasonics, thin films 87
tomography, Rayleigh waves 245
Laminated solid layers
ultrasound propagation, random fluctuations 289
Laser-ultrasonics
Lamb waves, thin films 87
Leaky Lamb modes
Schlieren imaging, radiation pattern phase 297
Learning algorithms
signal analysis, artificial neural nets 317
Liquid systems
propagation, models 104
Longitudinal and shear waves
wood, velocity 76
Longitudinal wavespeeds
inversion algorithms, elastic constants 43
Matching
transducers, impedance 67
Measuring techniques
sonochemistry, model reactions ... 40
Mechanochemistry
organic sonochemistry, single electron transfers 156
Medical applications
TGC amplifiers, RF signals 407
Medical ultrasonics
waveguides, mode propagation 82
Mode conversion
Rayleigh waves, compression waves 301
Mode propagation
medical ultrasonics, waveguides ... 82
Model reactions
sonochemistry, measuring techniques 40
Models
propagation, liquid systems 104
Non-destructing testing
BSCAN imaging, image processing 359
Numerical models
Rayleigh waves, steps 255
Oils
ultrasound, fats 385
Organic sonochemistry
single electron transfers, mechanochemistry 156
Organic synthesis
sonochemistry, selected examples 173
Osteoporosis
ultrasonic scattering, velocity and attenuation 391
Oxidative dissolution
dissolution kinetics, $RuO_2.xH_2O$. 333
Phase velocity
group velocity, anisotropic media . 373
Power ultrasound
industrial sonochemistry, chemical engineering 192
Propagation
anisotropy, composites 60
models, liquid systems 104
Quantitative sonochemistry
radical induced cis/trans isomerization 399
RF signals
TGC amplifiers, medical applications 407
Radiation pattern phase
leaky Lamb modes, Schlieren imaging 297
Radical induced cis/trans isomerization
quantitative sonochemistry 399
Random fluctuations
ultrasound propagation, laminated solid layers 289
Rayleigh waves
tomography, Lamb waves 245
numerical models, steps 255
compression waves, mode conversion 301
Research
sonochemistry, industrial application 203
Resonance
circumferential waves, Lamb waves 213
Resonance scattering
detection of defective fuel rod, Lamb waves 221
$RuO_2.xH_2O$
oxidative dissolution, dissolution kinetics 333
SAFT
transducers, harmonic excitation ... 49
transducers, transient exictation ... 56
SNR enhancement
split spectrum processing, filtering 351
Scattering
ultrasound attenuation, inclusions .. 8
spheres, sediments 15
Scattering of waves
acoustic echoes, submerged elastic shells 107
Schlieren imaging
leaky Lamb modes, radiation pattern phase 297
Sediments
scattering, spheres 15
Selected examples
sonochemistry, organic synthesis . 173
Signal analysis
artificial neural nets, learning algorithms 317
Single electron transfers
organic sonochemistry, mechanochemistry 156
Sonochemical enhancement
sonochemistry, electrochemiluminescence 186
Sonochemistry
model reactions, measuring techniques 40
cavitation, carbon tetrachloride ... 148
synthetic reactions, catalysts 163
cavitation, amorphous metal synthesis 168
organic synthesis, selected examples 173
biotechnology, enzymes 180
electrochemiluminescence, sonochemical enhancement 186
research, industrial applications ... 203
frequency effects, bubble radii distribution 267
Sonoluminescence
cavitation, bubble dynamics 152
Speckle reduction
ultrasonic imaging, synthetic aperture imaging 233
Spheres
scattering, sediments 15
Split spectrum processing
filtering, SNR enhancement 351
Steps
Rayleigh waves, numerical models 255
Submerged elastic shells
acoustic echoes, scattering of waves 107
Synthetic aperture imaging
ultrasonic imaging, speckle reduction 233
Synthetic reactions
sonochemistry, catalysts 163
TGC amplifiers
RF signals, medical applications .. 407

Thin films
laser-ultrasonics, Lamb waves 87
Tissue properties
biomedicine, bioeffects 35
Tomography
Rayleigh waves, Lamb waves 245
Transducers
matching, impedance 67
ultrasonic A-scan, absorption 311
SAFT, harmonic excitation 49
SAFT, transient excitation 56
Transient excitation
transducers, SAFT 56
Ultrasonic A-scan
absorption, transducers 311
Ultrasonic cavitation
ultrasonic standing waves, acoustic streaming 239
Ultrasonic imaging
speckle reduction, synthetic aperture imaging 233
Born approximation, geometrical theory of diffraction 275
Ultrasonic measurements
composite materials, elastic constants 365
Ultrasonic scattering
velocity and attenuation, osteoporosis 391
Ultrasonic standing waves
ultrasonic cavitation, acoustic streaming 239
Ultrasonic velocity
attenuation, impedance 403
Ultrasound
contrast agent, Albunex 95
fats, oils 385
Ultrasound attenuation
scattering, inclusions 8
Ultrasound propagation
laminated solid layers, random fluctuations 289
Ultrasound Doppler
capillary blood flow 225
Unscheduled DNA synthesis
biological tissues, bioeffects 35
Velocity
wood, longitudinal and shear waves 76
automated measurement, attenuation 347
Velocity and attenuation
ultrasonic scattering, osteoporosis 391
Waveguides
medical ultrasonics, mode propagation 82
Wood
velocity, longitudinal and shear waves 76

Conference reports

The European Society of Sonochemistry, Gargnano, Italy, 15–19 September 1991
Mason, J. J. 144

Book reviews

Diagnostic Ultrasound: Physics, Biology, and Instrumentation by S. C. Bushong and B. R. Archer
Wells, P. N. T. 199
Cardiac Imaging in Infants, Children and Adults by Lowry T. Elliot
Wilde, P. 200

Abstracts

Ultrasound hyperthermia. COMAC-BME Workshop, 12–14 September 1991, Strasbourg, France 113

REPRINTS

• *Educational* • *Ethical* • *Cost-effective* •

Promote your company or its products by giving your customers a reprint of a relevant article from this or any other issue of this journal.

For a quotation (without obligation), please complete the form opposite and post or fax it to us.

I am interested in obtaining reprints from.....

.....issue.....

Title of article: .....

No. of reprints: .....

Special requirements (if any): .....

.....

Name: .....

Company: .....

Address: .....

..... Postcode: .....

Tel: .....

Fax: .....

BUTTERWORTH HEINEMANN

Please return to: The Reprint Department, Butterworth-Heinemann Ltd., Linacre House, Jordan Hill, Oxford OX2 8DP. Tel: (0865) 310366. Fax: (0865) 311270.